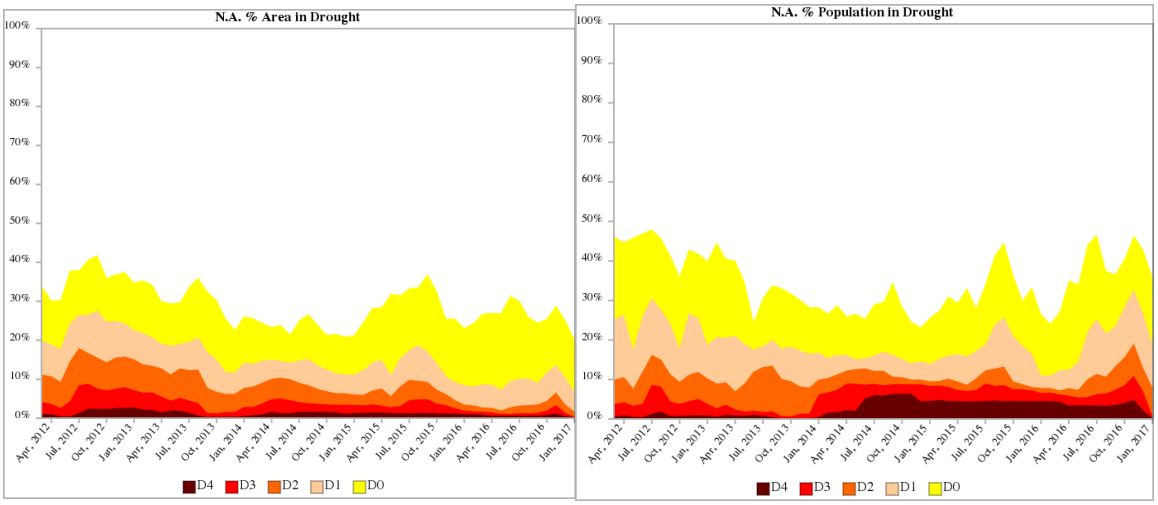
North American Drought Monitor—January 2017

At the end of January 2017, moderate to exceptional drought (D1-D4) affected approximately 6.7% of the area and 19.1% of the population of North America. The percent area value is 3.6% less than the value for the end of December 2016, and the percent population value is 7.5% less than the value for the end of December.



CANADA: Drought conditions in January remained similar to last month's assessment, as frozen ground in most regions and snow accumulation prevented significant changes in soil moisture. Temperatures were well above-normal for much of Canada, with the exception of southern British Columbia. Temperature departures of greater than 5 degrees Celsius were experienced in northern regions of Manitoba, Ontario and Québec. It was a dry month for most of British Columbia and Alberta; while much of Manitoba and Saskatchewan received well above normal precipitation increasing concerns for spring flooding. The New Year brought much-needed precipitation to eastern Canada resulting in improved conditions in southeastern Ontario. However, Moderate Drought persists in northern British Columbia, southern Ontario, and southern Nova Scotia due to long term deficits.

Western

Dry and drought conditions in the Pacific Region were generally unchanged throughout January. Precipitation deficits since early fall led to a large area of northern British Columbia remaining enveloped by Abnormally Dry (D0) conditions. Satellite-derived data and precipitation analysis showed that conditions on Haida Gwaii deteriorated due to long-term dryness; thus the Abnormally Dry (D0) pocket was expanded to include the entire island and the northern half of the island downgraded to Moderate Drought (D1). The D1 pockets around Prince Rupert and along the southern border of Yukon Territory persisted.

Another dry month contributed to an increasingly dry winter for the Prairie Region. A large portion of the agricultural regions of Alberta have received abnormally low precipitation since September, leading to increased concern for drought development across the province. Northwestern Alberta has received very little snowfall this winter, so the Abnormally Dry (D0) pocket in this region was expanded to include much of the Peace Region. Precipitation indices and satellite-derived data analysis led to the Abnormally Dry (D0) pocket in southeast Alberta being expanded. Saskatchewan received significant precipitation during the fall which allowed soil moisture at the time of freezing to be adequate; however snowfall accumulation has been extremely low in many parts of southern Saskatchewan, with much of the province receiving below 60 percent of normal precipitation. If deficits continue, D0 designation in these regions may be warranted. Additionally, no D0 pockets developed in Manitoba, as the soil was saturated at the time of freeze up, and large portions of the province experienced record snow fall in December.

Central

The Central Region benefitted from above-normal precipitation in January, with significant improvement in drought conditions. Regions of southeastern Ontario that were in Moderate Drought (D1), specifically around the Greater Toronto Area (GTA), improved to Abnormally Dry (D0) conditions as a result of more than 115 percent of average precipitation fell over the past two months and excellent streamflow values. Small D1 pockets east of the GTA towards Kingston and in the Niagara region persisted due to long-term drought impacts. Satellite and radar derived data and precipitation to historical distribution shown inadequate precipitation east of Georgian Bay since September, thus a small D1 pocket in this region remained as well. D1 conditions on Manitoulin Island improved to D0 as a result of near-normal precipitation over the past three months.

Southern Québec has been abnormally dry this winter, which resulted in a slight expansion of D0 and D1 pockets in the region. Abnormally Dry (D0) pockets in northern Québec improved, and were reduced to small pockets along the northern Labrador border and Kangiqsujuaq.

Atlantic

Drought conditions in Atlantic Canada continued to see improvement throughout January. The Moderate Drought (D1) pocket in southern Nova Scotia was reduced to a tiny pocket around Digby as a result of near-normal precipitation and good streamflow. Above average precipitation also improved the Abnormally Dry (D0) conditions in New Brunswick and Nova Scotia. Satellite-derived data showed dryness developing on the northern half of Labrador, thus the D0 pocket in this region was expanded.

Northern

Conditions in the Northern Region remained relatively unchanged throughout January. Satellite-derived data indicated improvement of the Abnormally Dry (D0) conditions along the northern border between the Northwest Territories and Yukon Territory. Dryness persisted across much of southwestern Yukon Territory and the southwestern region of the Northwest Territories, with Moderate Drought (D1) pockets remaining along the northern border of British Columbia.

MÉXICO: January 2017 was a very warm and dry month coming in as the second warmest and tenth driest according to records dating back to 1971 for temperature and 1941 for precipitation. Monthly rainfall was above the mean in the northwest, southern Veracruz and Chiapas. Overall, the national drought area depicted as moderate-to-extreme (D1-D3) saw a reduction of 4 percent, falling from 11.2 percent on December 31 to 7.2 up through January 31. The main drought areas were located in the north, south and the southeast.

In the northwest, three winter storms brought rains and beneficial moisture to improve drought conditions in this region. The extreme drought (D3), which covered 1.9 percent of Baja California last month, was erased. In addition, a reduction of moderate to severe drought (D1-D2) was reflected with a drop from 40.4 to 22.6 percent. In northern Sonora, the reduction was on moderate drought (D2) where the amount of affected area fell from 4.9 to 0.6 percent; however precipitation was not homogeneous with the southern region of Sonora designated with a new area of moderate drought (D1) after three months of abnormally dry (D0) conditions. Baja California and Sonora experienced their 17th wettest January covering the past 76 years. On the opposite side of the country, the Yucatan Peninsula's moderate drought (D1) was also significantly reduced, including a reduction from 39.9 to 12.4 percent in Yucatan, and from 84.5 to 32.7 percent in Quintana Roo.

In southern Mexico, high temperatures and scare rainfall contributed to the increase of drought. Oaxaca, which experienced their third driest and fourth warmest January, only had seven rainy days, which were light rain events. Extreme drought (D3) increased from 2.4 to 6.6 percent in this state. In Guerrero, the thirteenth driest and fifth warmest January on record led to persistence of moderate to severe (D1-D2) drought covering 26.1 percent of the state. Some parts in Chiapas (second warmest January) received precipitation from cold front passages, which was enough to contract the moderate drought (D1) from 16.6 to 3.5 percent, however, dryness (D0) remains in 34.8 percent of this state, in addition to 0.1 of moderate drought. Moderate drought (D1) also covers 2.3 percent of Jalisco, 6 percent of Colima, 1.7% of Hidalgo, 3 percent of Michoacán, 1.9 percent of San Luis Potosi, 4 percent of Tamaulipas and 3.8 percent of Veracruz.

The cool and wet pattern in northwestern Mexico brought a drop in temperature to that region. Most of Sonora had below-average temperatures with the western part of the state reporting departures of 2 to 3 °C below normal. These cooler anomalies were also extended to southern Baja California. Winter storms left temperatures lagging 3 to 5 °C below-average in northern Baja California. In addition to the cooler temperatures found in the northwest, isolated regions in Chihuahua, Jalisco, State of Mexico, Morelos, Guerrero and Oaxaca also recorded below-normal temperatures for the month of January. For the rest of

the country, temperatures were well above the average, mainly in northeast, where states such as Coahuila, Nuevo Leon and Tamaulipas experienced readings 3 to 5 °C above-average. The monthly mean temperature of 17.4 °C was 0.9 °C warmer than January's mean (1981-2010) and was classified as the second warmest January on record, just below that observed in January 2006, which reached 17.6 °C. Eight States experienced their warmest January: Campeche, Coahuila, Mexico City, Durango, Hidalgo, Nuevo León and Puebla.

The Information Service for Agri-Food and Fisheries (SIAP) reported losses of approximately 4.6 thousand hectares in the fall-winter season, mainly in the bean crop (63.3 percent of total area) as well as in sorghum and little pumpkins. The causes of these losses were attributed to 78.9% excess moisture, followed by pests and flooding. Nayarit and Sonora were the main states-reporting losses accounting for 78.9 and 13.6 percent of total reports. In perennial crops, coffee plants were the most affected, with 3.5 thousands of hectares damaged, mainly by diseases in Oaxaca and Chiapas.

Ten states, primarily in the south, were affected most by forest fires from January 1 to February 9 this year according to the National Forestry Commission (CONAFOR). Of those states, Oaxaca, Chiapas and Guerrero accounted for the largest affected areas with 7.66, 0.53 and 0.47 million hectares, respectively.

UNITED STATES: Substantial improvements were made over most of the drought regions in January as an active storm pattern brought multiple events over the West and Southeast. Drought improved from covering 22.53 percent of the contiguous United States at the beginning of the month to 14.55 percent at the end of the month. Severe drought improved from 8.63 to 3.83 percent, extreme drought improved from 3.15 to 0.41 percent, and exceptional drought was eliminated. This was the first time since March 2011 that there was no exceptional drought in the United States. January ended with approximately 89 million people in drought compared to just over 119 million in drought at the beginning of the month.

Drought Outlook

The monthly drought outlook has drought persisting over most of the Plains and Midwest and developing further over the Gulf Coast of southern Texas and south Florida. Improving conditions are anticipated over central California, New England, and the High Plains as well as in the Southeast.

Temperatures

There was quite a temperature contrast in January, with the eastern half of the contiguous United States above normal and the western half below normal. The warmest areas were in the Southeast, where temperatures were generally 6-9 degrees above normal, and the

coolest were over the Pacific Northwest, where temperatures were 9-12 degrees below normal.

Precipitation

January was very active for storms over the entire country, and almost all regions were normal to slightly above normal for total precipitation during the month. The wettest areas were in California, where precipitation totals were 10-15 inches above normal in the northern portions of the state. In the Southeast, southern Alabama, western Georgia, and the Florida panhandle were 5-10 inches above normal. The driest areas were in western Washington, where totals were 5-10 inches below normal.

Regional Overviews

Northeast

Temperatures were 3-6 degrees above normal throughout the region in January while most of the region was wetter than normal. Drier than normal conditions were recorded in portions of Connecticut, Massachusetts, Vermont, and New Hampshire, but departures were generally an inch or less below normal. Drought continues to linger in this region where a mix of short- and long-term indicators are driving the drought depiction. January started with 43.67 percent of the region in drought and ended with 34.82 percent in drought. Severe drought improved from 11.68 to 7.88 percent of the region while extreme drought improved from 1.39 to 1.10 percent.

Southeast

The entire region recorded above-normal temperatures in January with departures of 9-12 degrees above normal in Mississippi and Alabama. Most of the region recorded above-normal precipitation for the month, with areas of southern Alabama, western and central Georgia, and the Florida panhandle receiving 6-8 inches above normal. Drought continued to improve in the region; 20.71 percent of the area is now in drought, compared to 38.51 percent at the beginning of the month. Severe drought and extreme drought improved from 21.05 to 9.25 percent and 8.85 to 1.15 percent, respectively.

Midwest

All of the Midwest recorded above-normal temperatures in January. The eastern portions of the region were the warmest, with departures of 6-8 degrees above normal for the month. Most of the Midwest also had above-normal precipitation with only areas of southern Missouri and western Illinois coming in below-normal, with departures of up to 1.50 inches below-normal. Drought has been benign in the region, covering only 4.45

percent of the Midwest at the beginning of January and 1.37 percent at the end of the month.

High Plains

Temperatures were a combination of below and above normal for the region in January. Much of the northern Plains recorded below-normal temperatures with departures of 6-9 degrees below normal, while much of the eastern Dakotas, eastern Nebraska, and most of Kansas had temperatures that were 3-6 degrees above normal. Almost all of the High Plains recorded normal to slightly above-normal precipitation for January, with departures of up to 1.50 inches above-normal common. Drought conditions did improve in January, with 18.60 percent of the region in drought now compared to 21.54 percent at the beginning of the month. Severe drought also improved from 3.85 to 1.23 percent of the region.

South

Above-normal temperatures dominated the South, with most areas above normal for the month and eastern portions of the region being 8-10 degrees above normal. Almost the entire region was near-normal to above-normal for precipitation in January. Areas of Louisiana and Mississippi were 4-6 inches above normal for the month. Drought improved in the South as January ended with 17.70 percent of the region in drought compared to 27.69 percent at the start of the month. Severe and extreme drought improved from 11.09 to 6.40 and 1.11 to 0.73 percent, respectively.

West

Outside of New Mexico, almost the entire West had below-normal temperatures in January, with portions of the Pacific Northwest recording temperatures 9-12 degrees below normal. January was wet for most of the West, with almost all areas recording normal to above-normal precipitation. Western Washington was dry with departures of 5-10 inches below normal while central California was wet with departures of 15-20 inches above normal. With the wet month, drought conditions improved for the region. January ended with 13.38 percent of the area in drought compared to 21.51 percent at the start of the year. Severe drought improved from 8.53 to 2.83 percent, extreme drought improved from 5.11 to 0.25 percent, and exceptional drought improved from 2.44 to 0.00 percent. The last amount of exceptional drought was eradicated in California as the impact of several years of drought was finally being put behind them.